REMARKS

In accordance with the foregoing, the specification and claims 5, 7 and 17 have been amended. Claims 19 and 20 are newly added. Claims 1-20 are pending and under consideration. No new matter is believed to have been added.

I. REJECTIONS UNDER 35 USC §112

Claims 5 and 17 are rejected under 35 USC §112 first paragraph as failing to comply with the written description requirement with respect to altering command torques. Applicants respectfully traverse this rejection. Altering the command torques is described at least at the second paragraph on page 8. The command torque is described as creating a desired holding force suitable for the object depending upon various characteristics of the object. For example, a heavier object would require more torque than a lighter object.

Claims 5 and 17 are rejected under 35 USC §112 second paragraph as being indefinite for failing to particularly point our and distinctly claim the subject matter which applicant regards as the invention. Claims 5 and 17 have been amended to clarify the term characteristics.

In view of the above, it is respectfully submitted that the rejections under 35 USC §112 first and second paragraphs are overcome.

II. REJECTION UNDER 35 USC §103.

Claims 1-12 and 14-18 are rejected under 35 USC §103 as being unpatentable over US Patent No. 3,227,290 issued to Lemelson (hereinafter "Lemelson") in view of US Patent No. 4,604,016 issued to Joyce (hereinafter "Joyce").

Claim 1 recites "a robot having a robot hand for holding the object; *detecting means for detecting position/orientation of the object held by the robot hand relative to the robot hand*; and compensating means for compensating position/orientation of the robot hand for transferring the object to the second place *based on the position/orientation of the object relative to the robot hand detected* by said detecting means." (Emphasis added).

Claim 7, as amended, recites, inter alia, "first detecting means for detecting a position of the object supplied to the first place; control means for moving the robot hand to a holding position for holding the object using the detected position of the object detected by said

first detecting means and for controlling the robot hand to hold the object at the holding position; second *detecting means for detecting position/orientation of the object held by the robot hand relative to the robot hand,*" and "compensating means for *automatically* compensating position/orientation of the robot hand predetermined for transferring the object to the second place *based on the position/orientation of the object held by the robot hand relative to the robot hand detected by said second detecting means.*" (Emphasis added).

Lemelson discloses moving the arm of the article handling apparatus through a predetermined path to perform multiple prepositioning and transfer operations. (See Lemelson col. 2, lines 9-13, and col. 4, lines 20-31 and 44-50). However, Lemelson does not teach or suggest basing movements of the arm according to a detected position of an object held by the arm.

Joyce discloses a force feedback remote controller for actuation of a slaved apparatus. A camera 19 is used to permit a user to have a clear view of the workpiece and visually observe the results of manipulations of the feedback remote controller. Through various torque motors the forces encountered by the remote hand of the slaved apparatus are transferred back to the user for a tactile sensation. (See Joyce Abstract, and col. 4, lines 14-46).

However, Lemelson in any proper combination with Joyce does not teach or suggest at least the highlighted portions of independent claims 1 and 7. The combination of Lemelson and Joyce do not teach or suggest "detecting means for detecting position/orientation of the object held by the robot hand relative to the robot hand" (See independent claims 1 and 7 of the present application). Further, claim 7 recites that the compensating means automatically compensate for a position of the robot hand. In contrast, a user adjusts the arm in Joyce through use of the force feedback controller and thus is not capable of automatic compensation as recited in claim 7.

The camera 19 in Joyce is not equivalent to the "detecting means" as suggested in the Action at page 3. The camera 19 does not have the ability to perform any function other than capturing an image of the slaved apparatus and display the image for the user to see. Thus, the combination of Lemelson and Joyce would enable a user to watch the robot hand via the camera move through a predetermined path and provide force feedback of the forces encountered by the hand.

In contrast, as an advantage over the cited references, in a non-limiting example, when the "detecting means" recited in the present application are employed a displacement is calculated of the position/orientation of the supplied object relative to the robot hand 11

compared to a predetermined reference position, and then the "compensating means" adjusts the position/orientation based on the detected results. (See the specification as originally filed at page 7 lines 21-25 and lines 27-33).

Claims 2-6, 8-12 and 14-18 are allowable at least based on their dependency, either directly or indirectly, from one of allowable claims 1 and 7.

In view of the above, it is respectfully submitted that the rejection is overcome.

III. NEW CLAIMS 19-20.

New independent claim 19 recites, "a first robot having a hand which grabs an object, the first robot moves the object from a first position to a second position; *a first sensor which senses* a first position and/or orientation of *the object* at the first position and calculates a first displacement of the object from a first predetermined reference position and/or orientation; *a movable second sensor which senses a second position and/or orientation of the object at the second position and calculates a second displacement of the object from a second predetermined reference position and/or orientation relative to the hand.*" (Emphasis added).

Lemelson either alone or in combination with Joyce, does not teach or suggest at least the above highlighted features. Further, Lemelson and Joyce do not teach or suggest "a controller which adjusts the hand according to the first displacement of the object at the first position such that the hand grabs the object in a first desired position and/or orientation, the controller adjusts the first robot and the hand at the second position according to the second displacement of the object such that the object is at the second position at a second desired position and/or orientation", as recited in claim 19.

IV. CONCLUSION.

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: 11-1-04

By: _____
John C. Garvey
Registration No. 28,607

1201 New York Avenue, NW, Suite 700
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501